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10/643,694	08/18/2003	Young-Jun Kim	4611-018	5085
22440	7590	09/21/2007	EXAMINER	
GOTTLIEB RACKMAN & REISMAN PC			CUTLER, ALBERT H	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/643,694	KIM ET AL.
	Examiner	Art Unit
	Albert H. Cutler	2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 02 July 2007.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

1-20

4) Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) 6-10 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-5 and 11-20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

- Certified copies of the priority documents have been received.
- Certified copies of the priority documents have been received in Application No. _____.
- Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application

6) Other: _____.

DETAILED ACTION

1. This office action is responsive to communication filed on July 2, 2007.

Response to Arguments

2. Applicant's arguments, see pages 8 and 9, filed July 2, 2007, with respect to the rejection(s) of claim(s) 1-5 under 35 U.S.C. 102 and 35 U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Tanida et al.(US 7,227,577) and Michihiro et al.(Japanese Patent Abstract Publication 63,123,008).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 12-15 and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Akimoto et al.(US 2002/0167605).

Consider claim 12, Akimoto et al. teach:

A digital camera module(3 and 5, figures 1 and 2) comprising:

A barrel(31) having a top surface(see figures 1 and 2);
A lens(32) set in the barrel(31);
A tubular camera module(51) holding said barrel(31); and
A substrate(1) having image sensor(2) disposed thereon(see figure 2), with said module(5) being attached to said substrate(1) in a position selected to allow an image to be focus by said lens(32) unto said image sensor(2, see figure 2, paragraph 0025);
Wherein said barrel(31) includes a baffle(33, 33a) arranged and constructed to prevent the incidence of undesirable light beams on said lens(see figure 2, paragraph 0021).

Consider claim 13, and as applied to claim 12 above, Akimoto et al. further teach that said barrel(31) has a cylindrical shape with one end forming said top surface(see figures 1 and 2).

Consider claim 14, and as applied to claim 13 above, Akimoto et al. further teach that said baffle(33, 33a) has a disc shaped body with a central opening(See figures 1 and 2. The center of the baffle(33a) provides a diaphragm for the lens(32), paragraph 0021.).

Consider claim 15, and as applied to claim 14 above, Akimoto et al. further teach that said central opening has a sidewall has an inner sidewall having at least a first

diameter and a second diameter bigger than said first diameter(See figure 2. The baffle(33a) contains a bottom opening of a smaller diameter than a top opening.)

Consider claim 17, Akimoto et al. teach:

A digital camera module(3 and 5, figures 1 and 2) comprising:

A barrel(31) having a top surface(see figure 1 and 2);

A lens(32) set in the barrel(31);

A tubular camera module(51) holding said barrel(31); and

A substrate(1) having image sensor(2) disposed thereon, with said module(5) being attached to said substrate(1) in a position selected to allow an image to be focused by said lens(32) unto said image sensor(2, see figure 2, paragraph 0025);

Wherein said barrel(31) includes a mounting plate attached to said top surface for selective manipulation of said barrel(See figures 1 and 2. The top portion of the lens barrel comprises a mounting plate with no threads and a larger diameter than the bottom portion of the lens barrel, which mounting plate permits manipulation of the lens barrel(31) to adjust the focus. A baffled portion(33, 33a) is contained directly inside this top portion. See paragraph 0025.).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Tanida et al.(US 7,227,577) in view of (Michihiro et al., Japanese Patent Abstract

Publication 63,123,008).

Consider claim 1, Tanida et al. teach:

A digital camera module(figures 1-3b), comprising:

A barrel(2) having external threads(10) on an external surface thereof(see figures 1 and 3b, column 3, lines 52-63), with one or more lenses(8) set in the barrel(see figure 1, column 3, lines 52-63), and an assembling plate mounted to an upper surface of the barrel(See figures 1 and 3b. An upper portion of the lens barrel(2) which does not contain threads comprises an assembling plate for adjusting the focus of the lens on the image sensor, column 4, lines 29-52.);

A camera module housing(5) assembled with the barrel(2), the housing(5) having an internally threaded opening through which the barrel is mounted to the housing(column 3, lines 52-63);

An image sensor(1) converting an image of a subject into an electrical image signal(column 3, lines 49-51).

Tanida et al. teach that the assembling plate is formed in the upper surface of the lens barrel, column 3, lines 52-63, figures 1 and 3b. Tanida et al. further teach that the assembling plate can have a circumference the same as that of the camera module housing(column 3, lines 52-63) or smaller than that of the camera module housing(column 5, lines 49-52). However, Tanida et al. do not explicitly teach that the assembling plate is magnetic.

Michihiro et al. similarly teach of a lens barrel(4) containing one or more lenses(1, 2, and 3). See abstract figure. Also, similar to the assembling plate taught by Tanida et al., Michihiro et al. teach of a flat upper portion of the lens barrel(4) which covers a portion of the one or more lenses(1, 2, and 3), see figure.

However, in addition to the teachings of Tanida et al., Michihiro et al. teach that the lens barrel is made of magnetic material(an iron/nickel alloy, see abstract).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to construct the lens barrel including the assembling plate taught by Tanida et al. of an iron/nickel alloy(i.e. magnetic material) as taught by Michihiro et al. for the benefit of providing a lens barrel with a nearly equal coefficient of

heat expansion as that of a glass lens, and thus preventing distortion due to heat expansion and shrinkage(Michihiro et al., abstract).

The combination of Tanida et al. and Michihiro et al. does not explicitly disclose a substrate having an electronic circuit, with the image sensor installed on the substrate.

However, Official Notice (MPEP § 2144.03) is taken that both the concepts and advantages of installing an image sensor on a substrate within an imaging module are very well known and expected in the art. It would have been obvious to a person having ordinary skill in the art at the time of the invention to install the image sensor taught by Tanida et al. on a substrate within the digital camera module for the benefit of producing an integrated digital camera module with reduced size and close, efficient electrical connections provided between the image sensor and any image processing circuitry.

Consider claim 2, and as applied to claim 1 above, Tanida et al. teach that the assembling plate is a sheet(see 2, figure 3b), which assembling plate is part of the lens barrel(see claim 1 rationale). Michihiro et al. teach that the lens barrel, which would contain the sheet taught by Tanida et al. is made of magnetic material(see claim 1 rationale).

Consider claim 3, and as applied to claim 1 above, Tanida et al. further teach the assembling plate is provided with a baffle(11) arranged to prevent incidence of undesired light beams(column 4, lines 20-28).

Consider claim 5, and as applied to claim 1 above, the combination of Tanida et al. and Michihiro et al. teach of a magnetic lens barrel/assembling plate combination.

However, the combined invention of Tanida et al. and Michihiro et al. does not explicitly teach that the bond between the assembly plate and the lens barrel is created using an adhesive. However, Official Notice (MPEP § 2144.03) is taken that both the concepts and advantages of using an adhesive to bond two surfaces together are well known and expected in the art. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use an adhesive to bond the assembly plate to the lens barrel as taught by the combination of Tanida et al. and Michihiro et al. for the benefit that adhesives are cheap, simplistic in use, readily available, and potentially reversible in the case of alignment errors between two adhering objects.

8. Claims 4/2, 4/3, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanida et al.(US 7,227,577) in view of (Michihiro et al., Japanese Patent Abstract Publication 63,123,008) as applied to claims 1-3 above, and further in view of Saito et al.(US D489,388).

Consider claim 4, and as applied to claim 2 above, Tanida et al. teach of a lens barrel having an assembling plate(see claims 1 and 2 rationale). Tanida et al. also teach that the lens barrel is rotated during assembly via the assembling plate(column 4, lines 29-52, figure 3b). However, Tanida et al. do not explicitly teach that the

assembling plate is provided with a plurality of tool holes so as to hold the barrel during a process of assembling the barrel with the housing.

Saito et al. similarly teach of a camera module(see title, figures 1 and 2) that contains an assembling plate(top, figure 1) with a lens and a baffled portion arranged at an interior thereof(see figures 1 and 2).

However, in addition to the teachings of Tanida et al., Saito et al. teach that the assembling plate is provided with a plurality of tool holes(See figures 1 and 2. There are four opposing tool holes on the outer periphery of the assembling plate.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide the assembling plate taught by the combination of Tanida et al. and Michihiro et al. with a plurality of tool holes as taught by Saito et al. for the benefit that the lens barrel would be easier to grip during assembly with the image sensor module and thus provide a faster and more efficient production cycle.

Consider claim 4, and as applied to claim 3 above, Tanida et al. teach of a lens barrel having an assembling plate(see claims 1 and 2 rationale). Tanida et al. also teach that the lens barrel is rotated during assembly via the assembling plate(column 4, lines 29-52, figure 3b). However, Tanida et al. do not explicitly teach that the assembling plate is provided with a plurality of tool holes so as to hold the barrel during a process of assembling the barrel with the housing.

Saito et al. similarly teach of a camera module(see title, figures 1 and 2) that contains an assembling plate(top, figure 1) with a lens and a baffled portion arranged at an interior thereof(see figures 1 and 2).

However, in addition to the teachings of Tanida et al., Saito et al. teach that the assembling plate is provided with a plurality of tool holes(See figures 1 and 2. There are four opposing tool holes on the outer periphery of the assembling plate.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide the assembling plate taught by the combination of Tanida et al. and Michihiro et al. with a plurality of tool holes as taught by Saito et al. for the benefit that the lens barrel would be easier to grip during assembly with the image sensor module and thus provide a faster and more efficient production cycle.

Consider claim 11, and as applied to claim 1 above, Tanida et al. teach of a lens barrel having an assembling plate(see claims 1 and 2 rationale). Tanida et al. also teach that the lens barrel is rotated during assembly via the assembling plate(column 4, lines 29-52, figure 3b). However, Tanida et al. do not explicitly teach that the assembling plate is provided with a plurality of tool holes so as to hold the barrel during a process of assembling the barrel with the housing.

Saito et al. similarly teach of a camera module(see title, figures 1 and 2) that contains an assembling plate(top, figure 1) with a lens and a baffled portion arranged at an interior thereof(see figures 1 and 2).

However, in addition to the teachings of Tanida et al., Saito et al. teach that the assembling plate is provided with a plurality of tool holes(See figures 1 and 2. There are four opposing tool holes on the outer periphery of the assembling plate.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide the assembling plate taught by the combination of Tanida et al. and Michihiro et al. with a plurality of tool holes as taught by Saito et al. for the benefit that the lens barrel would be easier to grip during assembly with the image sensor module and thus provide a faster and more efficient production cycle.

9. Claims 16 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akimoto et al. in view of Michihiro et al.(Japanese Patent Abstract Publication 63,123,008).

Consider claim 16, and as applied to claim 12 above, Akimoto et al. teach of an assembling plate formed on the upper surface of the lens barrel, said assembling plate used to hold said barrel during assembly(The upper portion of the lens barrel, which portion does not contain threads and extends over the threaded portion, comprises an assembling plate which is used to adjust the focus of the lens on the image sensor during assembly(paragraph 0025). One would have to use the assembling plate to hold the barrel as the rest of the lens barrel(i.e. the portion other than the assembling plate) would be engaged with the threaded portion of a camera module housing(5), and thus

inaccessible. See also figure 4.). However, Akimoto et al. do not explicitly teach that the assembling plate is magnetic.

Michihiro et al. similarly teach of a lens barrel(4) containing one or more lenses(1, 2, and 3). See abstract figure. Also, similar to the assembling plate taught by Akimoto et al., Michihiro et al. teach of a flat upper portion of the lens barrel(4) which covers a portion of the one or more lenses(1, 2, and 3), see figure.

However, in addition to the teachings of Akimoto et al., Michihiro et al. teach that the lens barrel is made of magnetic material(an iron/nickel alloy, see abstract).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to construct the lens barrel including the assembling plate taught by Akimoto et al. of an iron/nickel alloy(i.e. a magnetic material) as taught by Michihiro et al. for the benefit of providing a lens barrel with a nearly equal coefficient of heat expansion as that of a glass lens, and thus preventing distortion due to heat expansion and shrinkage(Michihiro et al., abstract).

Consider claim 20, and as applied to claim 17 above, Akimoto et al. teach of an assembling plate formed on the upper surface of the lens barrel, said assembling plate used to hold said barrel during assembly(The upper portion of the lens barrel, which portion does not contain threads and extends over the threaded portion, comprises an assembling plate which is used to adjust the focus of the lens on the image sensor during assembly(paragraph 0025). One would have to use the assembling plate to hold the barrel as the rest of the lens barrel(i.e. the portion other than the assembling plate)

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would be engaged with the threaded portion of a camera module housing(5), and thus inaccessible. See also figure 4.). However, Akimoto et al. do not explicitly teach that the assembling plate is magnetic.

Michihiro et al. similarly teach of a lens barrel(4) containing one or more lenses(1, 2, and 3). See abstract figure. Also, similar to the assembling plate taught by Akimoto et al., Michihiro et al. teach of a flat upper portion of the lens barrel(4) which covers a portion of the one or more lenses(1, 2, and 3), see figure.

However, in addition to the teachings of Akimoto et al., Michihiro et al. teach that the lens barrel is made of magnetic material(an iron/nickel alloy, see abstract).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to construct the lens barrel including the assembling plate taught by Akimoto et al. of an iron/nickel alloy(i.e. a magnetic material) as taught by Michihiro et al. for the benefit of providing a lens barrel with a nearly equal coefficient of heat expansion as that of a glass lens, and thus preventing distortion due to heat expansion and shrinkage(Michihiro et al., abstract).

Although not explicitly stated that the assembling plate taught by the combination of Akimoto et al. and Michihiro et al. is engaged by a magnetic tool, figures 1 and 3a of Akimoto et al. clearly show an assembling plate(see 31) which is formed in a shape commonly gripped by and tightened/loosened by a tool. Many of such tools contain magnets so as to not loose grip when manipulating threaded fasteners such as screws. The magnetic material used by Michihiro et al. would be gripped by a magnetic tool,

regardless of the motivation provided for constructing a lens barrel of a ferromagnetic composition.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akimoto et al. in view of Tanida et al.

Consider claim 18, and as applied to claim 17 above, Akimoto et al. teach of a mounting plate(see claim 17 rationale). However, Akimoto et al. do not explicitly teach that said mounting plate is disc-shaped(see 31, figure 1).

Tanida et al. are similar to Akimoto et al. in that Tanida et al. teach of a lens barrel(2, figure 1) screwed into a housing(4) containing an image sensor(1), which lens barrel(2) includes a mounting plate(see figures 1 and 3B) and a baffle(light guide hole, 11). See column 3, line 31 to column 4, line 52.

However, in addition to the teachings of Akimoto et al., Tanida et al. teach that said mounting plate is disc-shaped(see figures 1, 2, and 3a).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the mounting plate taught by Akimoto et al. be disc-shaped as taught by Tanida et al. for the benefit of providing a larger gripping surface for manipulation of the lens barrel during focusing.

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akimoto et al. in view of Saito et al.(US D489,388).

Consider claim 19, and as applied to claim 17 above, Akimoto et al. teach of a lens barrel having an mounting plate(see claim 17 rationale). Akimoto et al. also teach that the lens barrel is rotated during assembly via the mounting plate(paragraph 0025). However, Akimoto et al. do not explicitly teach that the mounting plate is provided with a plurality of tool holes so as to hold the barrel during a process of assembling the barrel with the housing.

Saito et al. similarly teach of a camera module(see title, figures 1 and 2) that contains a mounting plate(top, figure 1) with a lens and a baffled portion arranged at an interior thereof(see figures 1 and 2).

However, in addition to the teachings of Akimoto et al., Saito et al. teach that the mounting plate is provided with a plurality of tool holes(See figures 1 and 2. There are four opposing tool holes on the outer periphery of the mounting plate.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide the mounting plate taught by Akimoto et al. with a plurality of tool holes as taught by Saito et al. for the benefit that the lens barrel would be easier to grip during assembly with the image sensor module and thus provide a faster and more efficient production cycle.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC



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